

## **REMARKS**

Claims 1-12 and 16-28 are pending in the patent application. Claims 1, 4-8, 11, 16 and 17 have been amended. New claim 28 has been added. No new matter has been added.

The drawings have been objected to for having non-conforming margins. New formal drawings are submitted with this Amendment to overcome this objection.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser executable code. The Specification has been amended to place brackets around the embedded hyperlink, as required.

Applicants note the Examiner's amendment in which originally filed claims have been renumbered 6-27. This amendment is acceptable, and this amendment includes the corrected claim numbering. The claim status identifiers appended to the claims above, however, do not reflect this amendment. In particular, the claims that have been renumbered under the Examiner's amendment are given the "original" status identifier if not amended herein.

Claims 4-8, 11 and 17 are objected to for using the term "filtering" in a manner contrary to its commonly accepted use. It is noted that newly numbered claim 16 contains the language identified as being objectionable, not claim 17 as indicated in the Office Action. Claims 4-8 and 16 have been amended to overcome this objection. Such amendments are not made for reasons of patentability and do not narrow the scope of the claims.

Claims 1, 7 and 8 are objected to for additional informalities. These claims have been amended accordingly. These amendments to claims 1, 7 and 8 are not made for reasons of patentability and do not narrow the scope of the claims.

### **Rejection Under 35 U.S.C. § 112**

Claims 1-12 and 17 are rejected under 35 U.S.C. § 112, second paragraph for being vague and indefinite. In particular, claims 1-12 are rejected because there is no indication as to what the selected ones are being appended. Claim 1 has been amended to indicate that the selected ones are appended to the recommendation list.

Claims 1 and 17 are also rejected because the limitation “predicted values” is indefinite, since the claims fail to specify what is being predicted. Applicants respectfully disagree, and point the Examiner to the last paragraph on page 5 of the current Specification. There, it is indicated that the term “predicted value” refers to a number that rates an item according to certain criteria. The predicted value may be used to rank an item based on recommendations from similar users, and is essentially an estimate of how much a user is likely to enjoy the item. It is further stated that the predicted value may be determined in a number of different ways, such as previous purchases, previous comments or a particular rating given by the user. In an illustrative example, where the recommendation engine uses user ratings, the predicted value is the value of rating that the recommendation engine predicts that the user will assign to the recommended item. Since the term “predicted value” has been given a specific meaning in the Specification, as an estimate of the user’s subjective like or dislike of an item, Applicants respectfully assert that the term is not vague and indefinite and that one of ordinary skill in the art would understand the scope of the claims.

Applicants believe that all claims comply with 35 U.S.C. § 112.

### **Rejection under 35 U.S.C. § 102**

Claims 1 and 3-12 rejected under 35 U.S.C. § 102(b) as being anticipated by Hey (U.S. Patent No. 4,996,642). Hey describes a system and method for recommending items. The recommendations are adjusted for the selected user by applying weighting values to items not yet sampled by the user to

proportionally alter the difference between a rating previously established for each item not yet sampled by the user and ratings of that item by the recommending users (col. 3, lines 5-13). The selecting of the items includes determining the availability of the item by interrogating a system such as an inventory management system. Alternatively, an inventory status of items may be kept.

The invention of amended claim 1 is directed to a method for providing a recommendation list from a plurality of items. The method comprises the steps of executing in a data processing system: specifying an adaptable constraint filter, using constraint forming rules, to select ones of the items satisfying a constraint, and selecting the ones of the plurality of items that satisfy the constraint filter. Predicted values are computed, based on a recommendation filter, for the selected ones of the items. The selected ones of the items meeting predetermined criteria are appended to the recommendation list.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628,631, 2 USPQ2d 1051 1053 (Fed. Cir.) 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." Richardson v. Suzuki Motor Co., 868 F. 2d1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Therefore, if a reference does not teach every element of the claim, then the reference does not anticipate the claim (see MPEP § 2131). Applicants respectfully contend that Hey fails to teach every element of claim 1 and, therefore, fails to anticipate the claim.

In particular, Hey fails to teach specifying an adaptable constraint filter, using constraint forming rules, to select ones of the items satisfying a constraint. Instead, Hey teaches a single constraint that is hard-wired into the recommendation process. There is no flexibility in Hey's constraint: the same constraint (the item is in stock) is applied to every recommendation.

In contrast to Hey's method, the method of claim 1 uses constraint-forming rules, for example as are discussed on pages 8 and 9 of the present Specification, and are illustrated in FIGs. 4 and 6A. Furthermore, a method of inputting data and/or constraint rules to the constraint filter is discussed with reference to FIGs. 6B and 6C. As a consequence of using the constraint rules, the constraint filter becomes adaptable to different users, so that the effect of the constraint is tailored specifically for the user's needs. Using the claimed approach, for example, a user may decide to specify whether to see recommendations for items that are not in stock. Such an option is not provided by Hey's system. Since Hey's constraint is hard-wired, there is no flexibility, and all users are subject their recommendations passing through the same constraint.

Accordingly, since Hey fails to teach all the elements of claim 1, claim 1 is not anticipated by Hey, and claim 1 is allowable.

Dependent claims 3-12, which depend from claim 1 and further define the invention of claim 1, were also rejected under 35 U.S.C. §102(b) as being anticipated by Hey. While Applicants do not acquiesce with the particular rejections to these dependent claims, it is believed that these rejections are moot in view of the remarks made in connection with independent claim 1. Therefore, dependent claims 3-12 are also in condition for allowance.

Claim 4 is directed to a boolean constraint containing free variables. Hey fails to teach the use of a constraint that contains free variables. Instead, Hey teaches the constraint that the recommended item must be in stock.

Claim 6 is directed to the constraint filter being a boolean constraint. One example of a boolean constraint filter is a filter that contains several individual constraints that are linked via boolean logic, as illustrated in FIG. 6A. Hey fails to teach such a filter, teaching instead a single step constraint, i.e. the item is in stock.

Claim 7 is directed to the constraint filter signifying an equality. Hey fails to teach the use of a constraint that signifies an equality.

Claim 11 is directed to obtaining data from the user and adding the data to the constraint filter. This is an important aspect of an adaptable constraint filter that is capable of adapting to the needs of the user. Hey fails to teach such a method. Instead, Hey teaches a constraint that is hard-wired and that is incapable of receiving any input from the user.

Claim 12 is directed to obtaining the constraint from an operator and storing the constraint filter in memory. Hey fails to teach obtaining the constraint, as an adaptable constraint, from the operator. Instead, Hey teaches that the constraint is fixed at one point in time.

### **Rejection under 35 U.S.C. § 103**

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hey in view of Herz (U.S. Patent No. 6,460,036). It is stated in the Office Action that Hey teaches the method as substantially claimed except for providing a recommendation list wherein items are appended to the recommendation list when the predicted value exceeds a predicted number. It is further stated in the Office Action that Herz explicitly teaches a method for providing a recommendation list wherein items are appended to the recommendation list when the predicted value exceeds a predetermined number, and that it would have been obvious to one of ordinary skill in the art to append items to the recommendation list when the predicted value exceeds a predetermined number since this would allow a user to access information of relevance and interest without expending an excessive amount of time and energy searching for the information, and also because it would efficiently provide only desired information to the user and conserve valuable storage space by only storing those target objects which are relevant to the user's interests.

Herz teaches a system and method for providing customized electronic newspapers and targeted advertisements. Herz teaches a method of searching for target objects having a target profile similar to a given search profile, P (col.

25, lines 18-61), which adds target objects to the list where a certain threshold is reached (step 13B-03 in Fig. 13B).

Herz fails to remedy the deficiencies of Hey described above with regard to claim 1. In particular, Herz fails to teach or suggest an adaptable constraint filter, that is specified using constraint forming rules, to select items that satisfy a constraint. Accordingly, the proposed combination of references fails to teach or suggest all the elements of claim 2, and claim 2 is allowable.

Claims 16-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hey in view of Jarke et al. (Query Optimization in Database Systems, Computing Surveys, vol. 16, June 1984) (Jarke). It is stated that Hey teaches an apparatus for providing a recommendation list from the plurality of items substantially as claimed, except for the step of determining an order of the filters to apply to the plurality of items based on the cost of the filters, wherein the constraint filter is applied first when the cost is lower and applying the recommendation filter first when the cost is lower. It is further stated that Jarke teaches an apparatus for providing a recommendation list comprising the step of determining the order of filters to apply to the plurality of items based on the cost of the filters. It is further stated that it would have been obvious to one of ordinary skill in the art to choose an access plan to optimize the query question, since this would allow a system to maximize the output for a given number of resources, minimize the resource usage for a given output, and minimize the response time for a given query language and mix of query types in a given system environment.

Three criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference, or combination of references, must

teach or suggest all the claim limitations. MPEP § 2142. Applicants respectfully traverse the rejection since the prior art fails to disclose all the claim limitations.

Jarke is directed to the optimization of queries in database systems. Jarke teaches, in Section 5, beginning on page 134, the development of an optimal access plan. This consists of the following steps: 1) generating all reasonable logical access plans for evaluating the query; 2) augmenting the logical access plans by details of the physical representation of the data and 3) choosing the cheapest access plan by applying a model of access and costs. One method of reducing optimization costs, discussed in section 5.3, starting at page 137, is to compute the cost of strategies incrementally in parallel, using a dynamic query optimization procedure.

The invention of claim 16 is directed to an apparatus for providing a recommendation list from a plurality of items in a data processing system. The apparatus comprises a processing component that is configured to process instructions for: i) applying a constraint filter to ones of the items, ii) applying a recommendation filter to ones of the items, and iii) determining an order of the filters to apply to the plurality of the items. The apparatus also includes a recommender component configured to append selected items to a recommendation list based on the constraint filter and the recommendation filter.

Applicants respectfully contend that the proposed combination of references fails to teach all the elements of the invention of claim 16. In particular, neither reference teaches or suggests a processing component that is configured to determine an order of the constraint and recommendation filters to apply to the plurality of items. It is admitted in the Office Action that Hey fails to teach or suggest this step.

It is important to understand first that that application of the constraint and recommendation filters constitutes significant processing over and above simple data retrieval, and that it would be unreasonable to characterize the application of the constraint and recommendation filters as simple data retrieval steps.

Jarke teaches the use of optimization procedures to reduce the cost of retrieving items from a database. It is important to realize that Jarke does not discuss the application of constraint filters, nor the application of a recommendation filter. Instead, Jarke is only concerned with retrieving items from a database, a first step that is inherent in the claimed apparatus: the items have to be retrieved from the database before the constraint filter or the recommendation filter can be applied. Jarke teaches a way of optimizing the initial search and retrieval of the items from the database. Jarke is silent, however, on how to choose the order of applications performed on the items once they have been retrieved from the database. In particular, Jarke fails to teach or suggest that, once items have been retrieved from the database, a determination is made as to the order to two successive operations, namely constraint filtering and recommendation filtering.

Accordingly, since the proposed combination of references fails to teach or suggest a processing component configured to determine an order of the filters to apply to the plurality of the items, the proposed combination of references fails to teach or suggest all the elements of independent claim 16, and claim 16 is patentable over the cited art.

Dependent claims 17-27, which depend from claim 16 and further define the invention of claim 16, were also rejected under 35 U.S.C. §103(a) as being unpatentable over the proposed combination of Hey and Jarke. While Applicants do not acquiesce with the particular rejections to these dependent claims, it is believed that these rejections are moot in view of the remarks made in connection with independent claim 16. Therefore, dependent claims 17-27 are also in condition for allowance.

Claim 19 is directed to a boolean constraint containing free variables. Neither of the proposed references teaches or suggests the use of a constraint that contains free variables. Instead, Hey teaches the constraint that the recommended item must be in stock. Jarke does not teach constraints.



Claim 21 is directed to the constraint filter being a boolean constraint. Neither of the proposed references teaches or suggests the application of a boolean constraint filter. One example of a boolean constraint filter is a filter that contains several individual constraints that are linked via boolean logic, as illustrated in FIG. 6A. Hey fails to teach such a filter, teaching instead a single step constraint, i.e. the item is in stock.

Claim 23 is directed to the constraint filter signifying an equality. Neither of the proposed references teaches or suggests the use of a constraint that signifies an equality.

Claim 26 is directed to obtaining data from the user and adding the data to the constraint filter. Neither of the proposed references teaches or suggests such a method. Instead, Hey teaches a constraint that is hard-wired and that is incapable of receiving any input from the user. Jarke fails to address constraint filters.

#### **New Claim**

New claim 28 has been added without adding new matter. New claim 28, which depends from claim 16, is directed to the apparatus being configured to adaptively specify the constraint filter, using a set of constraint-forming rules. This is supported, for example, in claim 1.

### CONCLUSION

In view of the amendments and reasons provided above, Claims 1-12 and 16-28 are in condition for allowance. Applicants respectfully request favorable reconsideration and early allowance of all pending Claims.

The Examiner is invited to contact the below-signed attorney of record at (952) 253-4110 to discuss any further issues related to this case.

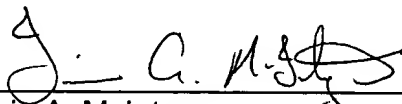
Respectfully submitted,

Altera Law Group , LLC



Date: April 11, 2003

By:

  
Iain A. McIntyre  
Reg. No. 40,337